

ASBESTOS IN CLASP AND OTHER SYSTEM BUILDINGS

Control of Asbestos Regulations 2006

Guidance for duty holders produced by the HSE Asbestos in Schools 'CLASP' Working Group – March 2007

PURPOSE

1. This guidance gives information about potential asbestos fibre release in CLASP buildings built between 1945-1980. However, it should be noted that the same issues are faced in all types of 'system built' buildings constructed during the same period. The names of other known systems are given in the further information section at para 31.
2. The guidance sets out the action that duty holders (paras 13-14) are required to take to manage asbestos in CLASP buildings of the period defined in para 1 above. Paras 15-17 set out what action should be taken immediately and paras 18-25 set out the action that should be taken in the longer term.
3. Duty holders should already be managing the risks from asbestos present in buildings within their control. However, new information about the potential for asbestos fibre release from damaged column casings in 'system built' buildings has recently come to light. This damage, which includes 'cracks' and 'gaps' in the column casings, may have occurred as a result of previous alteration, removal or direct physical impact on the casing.
4. This guidance should be kept with the asbestos register or the health and safety file for the building. It should be readily available for reference/inspection whenever maintenance work, redecoration, building alteration work or the eventual demolition of the building is commissioned.

INTRODUCTION

5. Asbestos containing materials (ACMs) were widely used in 'system' buildings constructed during the period 1945 – 1980. Within all buildings of the period, ACMs were used extensively on pipe work, heating plant and other services, and as ceiling tiles and wall panels. For example many of the 'system' buildings used lightweight steel frames that required fire protection, particularly in ground floor locations of multi-storey buildings. Asbestos insulating board (AIB) was used for this purpose. It is important to note that the building systems developed over time and details were revised and specification of materials changed. This has led to variation in the types and locations of ACMs within these buildings.
6. CLASP (Consortium of Local Authorities Special Programme) was formed with the purpose of developing a method of building, which did not rely on traditional building skills, to provide fast and efficient permanent buildings. The systems were developed as either proprietary contractor owned products or Local Authority

Consortia designs. Of a total number of 3134 CLASP contracts in the UK there are more than 1400 sites with CLASP built schools (some comprising more than one contract), distributed among 81 LEA/Children's Services Departments/Scottish Local Authorities. Independent schools own a small number of CLASP buildings. There are also small numbers of CLASP buildings across other areas of the public sector including local government, police, fire, MOD, health and railways.

7. Marks 2, 3, 3b, 4, 4b and early 5 CLASP buildings built between 1945 and 1980 may all contain asbestos materials, particularly mark 4 and 4b. Other 'system' buildings will have used similar construction techniques and are also likely to contain asbestos (see para 31).

8. In these types of buildings, some steel columns may be insulated with AIB. The AIB may only be present in those that provide fire protection, usually on the ground floor in multi-storey buildings. It may be fixed directly to the column or glued to the metal casing. AIB was also sometimes used as column packing. Other ACMs may also be found in blind boxes to the windows.

9. ACMs may also have been used in these buildings as unrecorded substitute items where there were material shortages and/or poor supervision. In addition excess or waste ACMs may have been left hidden inside columns or panels and ceiling voids. Consequently, asbestos may be found in some unexpected locations and the presumption should be that ACMs would be present in other concealed areas.

10. The potential for asbestos fibre release in 'system' buildings was recently highlighted at a mark 4/4b CLASP school that had undergone window replacement and associated asbestos removal work. Further details of this are given in paras 26-28. Duty holders need to take action in the light of this new information. The nature of the school environment and the vulnerability of the population exposed, together with the largest stock of CLASP buildings, mean that schools are a particular priority.

MANAGING ASBESTOS

11. Duty holders have a responsibility under regulation 4 of the Control of Asbestos Regulations (CAR) 2006, to manage the risks arising from asbestos in buildings under their control. Duty holders must take reasonable steps to find ACMs in their premises and to check its condition. Duty holders must provide information on the location and condition of the asbestos to those people who are liable to disturb it. The information is particularly relevant to contractors and others who undertake maintenance and refurbishment work or other work, which disturbs the fabric of the building, e.g. cable installation.

12. ACMs pose no threat to health if intact, undamaged and not disturbed. HSE recommends that ACMs are left in place and managed where they are in good condition and will not be damaged by activities. These materials do not present a risk to the building occupants. Where ACMs do pose a risk to health then action should be taken to encapsulate or remove the material. See <http://www.hse.gov.uk/asbestos/index.htm> for more information.

WHO HAS THE DUTY TO MANAGE ASBESTOS?

13. In educational establishments the duty holder will be the employer. Who the employer is can vary with the type of school:

- For community schools, community special schools, voluntary controlled schools, maintained nursery schools and pupil referral units the employer is the Local Authority.
- For foundation schools, foundation special schools and voluntary aided schools, the employer is usually the Governing Body
- For independent schools, the employer is usually the Governing Body or the proprietor.

14. In other parts of the public sector, the duty holder will be the health or ambulance trust, LA, fire & rescue authority (board in Scotland) or police authority (board in Scotland).

ACTION REQUIRED BY DUTYHOLDERS

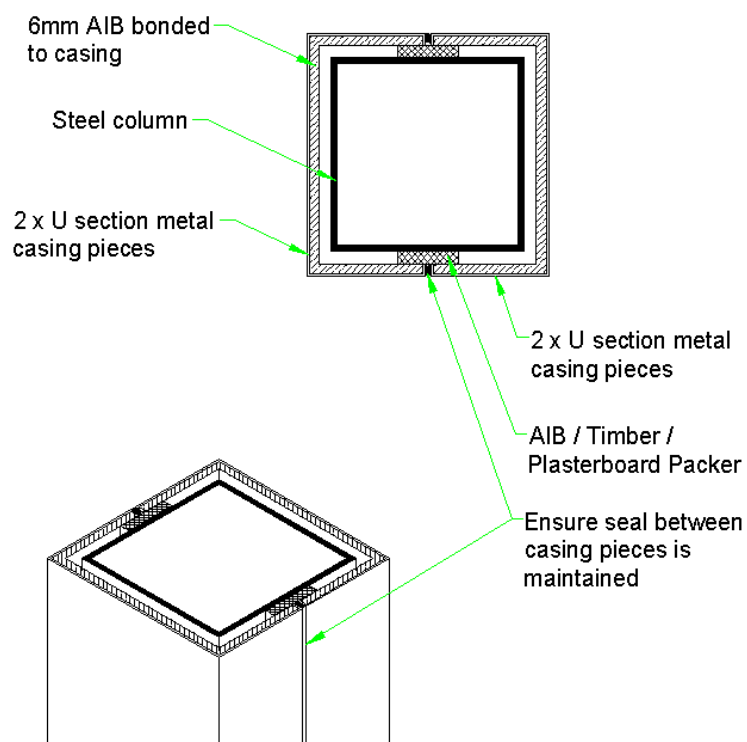
Immediate action

15. Duty holders must ensure the following action is taken immediately to manage asbestos in 'system' buildings.

- i) Identify all CLASP (and other building systems) buildings, particularly mark 4 and 4b as a priority, but also include CLASP buildings built between 1945 and 1980. Assistance on identifying CLASP buildings can be obtained from SCAPE (see para 30). Carrying out a desktop survey of building plans can also help with this but note that these plans may not always be wholly accurate (see para 5).
- ii) Where the building is a CLASP or other system design, visually inspect (see para 16 for priority areas for inspection)
 - the full lengths of all the column casings for cracks, gaps, presence of screws, dents, damage and movement
 - the back of the casings as there is potential for gaps to occur here
 - the top and bottom of the column casings

- check also for signs of maintenance work after installation e.g. fixtures attached to casing, holes drilled or improper installation.

Figure 1 - DIAGRAM OF CASING AROUND COLUMNS



iii) Seal all gaps in the joints between:

- column casing to casing
- column casing to skirting
- column casing to walls

using a silicone based sealant to enclose dust and debris within the casing. UPVC strips can be used as finishing over the top of the sealed gaps using the same sealant.

- iv) Visually check to ensure that the sealing is effective.
 - v) If the casings are loose they should be resecured. The fixings are normally at high (above ceiling) and low (behind skirting board) level and may be fixed with either a locking rod or screwed/nailed in. Any work undertaken to resecure loose casings should be carried out in line with the procedures given in the Asbestos Essentials Task Sheets for minor drilling work - see <http://www.hse.gov.uk/asbestos/essentials/index.htm>
 - vi) Note and record the action taken.
16. Priority for the visual inspection should be given to:
- o Mark 4 and 4b buildings but also include all buildings constructed prior to 1974
 - o Ground floor columns, as they are the most likely to have AIB fire protection on the steel work
 - o Where refurbishment/installation works have disturbed the column casings and the internal lining to the external wall.
 - o Where cables or wires have been threaded inside the column casings possibly disturbing the ACM.
 - o Where items have been fixed to the column casings e.g. fire extinguishers hanging brackets.
17. As the above action does not involve contact with ACMS (in most cases) it can be considered routine maintenance work and can be carried out by maintenance personnel e.g. joiner, rather than a licensed asbestos contractor. However, if there is serious damage to a column and suspected exposed asbestos material then assistance should be sought from a licensed asbestos contractor. The Control of Asbestos Regulations 2006, Approved Code of Practice and guidance L143 (see <http://www.hse.gov.uk/asbestos/regulations.htm>) contains specific obligations for the provision of asbestos awareness training to all employees who could foreseeably be exposed to asbestos. This includes caretakers and other maintenance staff.

Action to be taken in the longer term

18. Action may also be required in the ceiling void. The tops of columns in the ceiling void are usually open or unsealed. Although there is little evidence to date to suggest contamination of ceiling voids, where the column AIB has been damaged there may have been spread of asbestos material into the void. There is minimal risk unless people enter the area. If maintenance or other work requires staff to access the area they should be aware of the potential for contamination and be suitably protected – see paras 21-23 below. Duty holders may wish to inspect these areas sooner rather than wait until entry is required. A visual inspection can be carried out to determine if there is any asbestos contamination, which again maintenance personnel can undertake provided they have been trained and equipped as described in paras 21-23.

19. If the initial visual inspection reveals contamination of the ceiling void with ACM debris, licensed asbestos contractors should be used to clean the area and seal the tops of the columns using polyurethane foam or similar – see <http://www.hse.gov.uk/asbestos/licensing/index.htm> for a list of licensed contractors.
20. In schools, teaching staff should be instructed not to lift ceiling tiles to display pupils' work.
21. All employees entering a potentially contaminated area or involved in work with asbestos must be trained and suitably equipped. The training should include information about what asbestos is (the types), where it is found, and what the risks and health effects are from exposure to asbestos. They should be provided with suitable and appropriate personal protective equipment (PPE) as a precaution. Suitable PPE includes:
- Disposable overalls (type 5) fitted with a hood.
 - A suitable fit-tested particulate respirator e.g. a disposable FFP 3 mask.
 - Cover shoes or boots without laces e.g. (laced boots can be difficult to decontaminate).
22. All PPE should be inspected before use, and any defects reported to the relevant supervisor. Users should be instructed to put the facemask on under the hood of the asbestos suit and not over the hood.
23. Detailed guidance on Personal Protective Equipment and Personal Decontamination is available in HSE guidance notes em6 and em8 respectively. These can be downloaded from <http://www.hse.gov.uk/asbestos/essentials/index.htm>
24. Any further work that may disturb the column casing should be properly assessed to determine the potential for ACM disturbance. Where work with ACMs is likely, it should be carried out in accordance with CAR 2006. Under no circumstances must any item of plant, equipment, accessory or fixture be mechanically fixed to the metal column casing without a Type 3 survey being undertaken and the process being fully risk assessed.
25. Duty holders are reminded that CAR 2006 applies to all property maintenance and refurbishment projects. It is known that the current 'Building Schools for the Future' programme will involve extensive refurbishment and remodelling of existing school buildings therefore under the 'duty to manage' the duty holder must ensure all stakeholders are made aware that asbestos is likely to be encountered when planning and undertaking such works.

BACKGROUND

26. Following window replacement and associated asbestos removal work at a Mark 4/4b CLASP school in late July 2006, contractors failed to obtain levels of fibre in air below 'clearance levels' when as part of deliberate disturbance they struck parts of the metal casing around columns in the room. The measured concentrations inside the tented enclosure suggested that there was release of fibres from within the columns. The standard method used to count the fibres (phase contract microscopy) did not discriminate between asbestos and non-asbestos fibres.

27. An assessment of the cause of the release found that a particular set of circumstances was needed for there to be a release of fibres. These were:

- (i) damaged asbestos insulating board and debris lying within the columns, for example, if the AIB has been damaged by earlier maintenance or installation work such as window replacement that has broken into the columns (this method of work is contrary to advice from SCAPE System Build Ltd, which is the trading company for CLASP)
- (ii) significant impact on the casings, i.e. casings being forcibly struck by furniture or people causing fibres to come off the exposed edges of the damaged AIB, and vibration caused by closure of windows and doors.
- (iii) a poor seal in some of the metal column casings that are meant to enclose the AIB, causing gaps through which fibres can escape into the room. Gaps are most likely to occur between joints in the metal casing around the columns, between the casing and skirting or wall (see figures 1-4). They are most likely to be present if the metal casing has been cut in some way, for example, by maintenance and installation work or if the casing has been removed and then repositioned. However, even where none of these activities have occurred, gaps may still be found along the 2 joints to the column casings or at the bottom of the casing.

28. Further investigations showed that there were a number of other factors that would have contributed to the incident:

- During the original construction of the school, waste material, including AIB and asbestos cement sheet, had been discarded within the external wall cavities. This was particularly poor practice and could occur in other system-buildings.
- The metal column casings had been disturbed over the years during cabling and other minor work. These activities had caused damage to the concealed AIB.
- Replacement windows had been fitted in a manner that had also caused disturbance of the metal column casings and damage to the AIB. Window replacement work was not carried out in accordance with CLASP's standard recommended fixing methods.

- Debris from previous asbestos installation or removal works in the column casings behind panels, walls skirting board etc. Again this was particularly poor practice in this school and may or may not be common to other system buildings.

Figure 2: Metal clad column showing gap at front of column where the two halves of the cladding meet



← Gap where casing joins

← Windowsill

Figure 3: Window column with half the section of casing removed –revealing the column and AIB

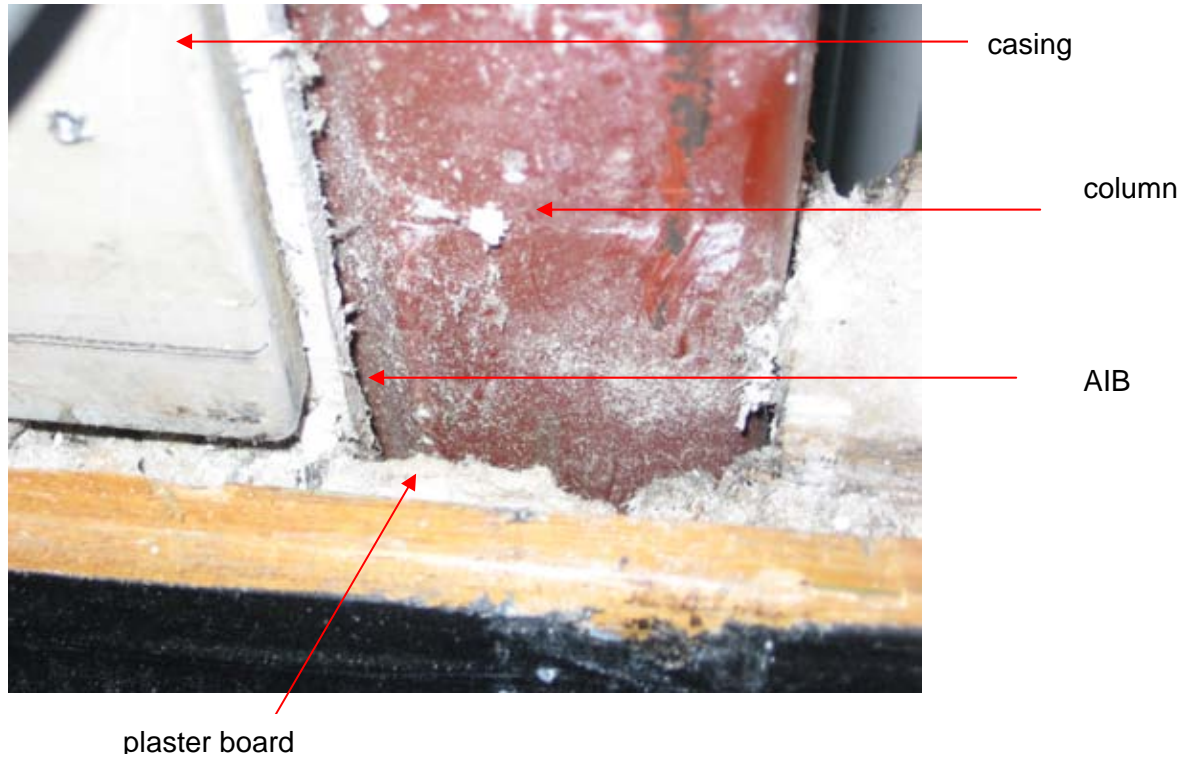


Figure 4: Example of a gap in the casing



FURTHER INFORMATION

29. The Scape **Asbestos Awareness Handbook** can be down loaded from <http://www.scapebuild.co.uk/NetBuildPro/process/29/BuildingSystems.html>. The Handbook is not a substitute for the correct performance of the procedures and surveys set out in the HSE Regulations. It does however, provide guidance as to where asbestos was typically specified in the CLASP standard details.

Scape

30. Scape System Build Limited is a Local Authority Controlled Company. It commenced business in April 2006 and is the trading company for the CLASP Consortium. For more detail consult the Scape web site www.scapebuild.co.uk and the CLASP web site www.clasp.gov.uk.

31. Other building designs include local authority systems such as SCOLA, MACE, ONWARD, Method, SEAC and contractor systems such as Hills, Laingspan and Vic Hallam.